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ABSTRACT

The jigsaw reading technique maximizes the interactive basis of cooperative learning. The advantages of cooperative learning are that it increases student independence; promotes peer teaching; can be used in multi-level classrooms; can be used in a variety of content areas; can be adapted for use in all age groups; promotes individual and group responsibility; avoids dominance by one group member; creates peer acceptance and understanding; develops social skills; and aids in assessment. In a typical example of the jigsaw technique, the teacher prepares four texts (related to, but different from each other) for groups of students to use. Students complete the reading and do the exercises in their "expert" group, each group using one of the four different texts. Students then gather into four-member jigsaw groups, where each person has a different text, and share the information from the different texts. Students write the tests used to evaluate the groups' learning of the material. When creating their own jigsaw reading activities, teachers should: (1) choose topics of high interest to the students; (2) find out how much their students know about a topic to determine the level of complexity of the information; (3) adapt their source of input to the needs of their students; (4) remember that not everything works; and (5) get feedback from students. (RS)

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LITERACY THROUGH COOPERATIVE LEARNING:

THE JIGSAW READING TECHNIQUE

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Ruth Epstein

August 1991

Monograph No. 7

Abstract

This monograph briefly outlines the major principles underlining the jigsaw reading technique, a technique often used in cooperative learning. This technique is modelled after the jigsaw reading technique described and developed by teaching professionals such as Coelho, Aronson, Clarke and Wideman, and Geddes and Sturtridge. The jigsaw technique has broad applications for learners working on social skills and literacy skills. It is effective with learners of all ages and levels of proficiency in various subjects such as social studies, the language arts, and particularly with students of English as a Second Language.

The author describes the difference between cooperative learning and group work, and outlines ten advantages of cooperative learning. The latter part of the monograph describes how to conduct a jigsaw reading activity so students can practise vocabulary. Using an example of four jigsaw groups in a classroom, the monograph describes procedures for guiding students in organizing their initial jigsaw groups, procedures for working in the "expert" groups, and guidelines when the jigsaw groups are revisited. The testing aspect at the completion of the exercise is considered. Finally, the author describes five factors a teacher needs to consider when creating any jigsaw activity, and concludes with six steps to follow when creating a jigsaw reading exercise.

ABOUT THE AUTHOR...

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Literacy through Cooperative Learning: The Jigsaw Reading Technique

Background

I first came into contact with Cooperative Learning and the Jigsaw Technique at a workshop of the Japan Association of Language Teachers (JALT) in 1984, although the technique has existed much longer than that. In 1986 I attended TESL Ontario, a conference for teachers of English as a second language, where I attended a session by Elizabeth Coelho, teacher with the North York Board of Education, in Toronto. In 1987 I attended a day-long symposium on the technique in Toronto, which was again presented by Coelho.

During teaching positions in Indonesia in 1986 and 1987, I used jigsaw reading extensively to improve students' comprehension of difficult reading material. Over the past few years I have noted the potential value of the technique for people who work in the area of literacy.

This paper briefly outlines the principles underlying cooperative learning, and describes how the jigsaw technique works in the classroom. The paper also addresses how educators can create jigsaw readings that are suitable for their own students' proficiency levels and interests.

Principles of Cooperative Learning

Cooperative learning is based on the concept that students learning together in small groups increases the individual learning of each group member. Cooperative learning differs from group tasks where everyone may or may not contribute and the responsibility for absorption of the material lies with the individual. In group work it is theoretically possible for each student to do

the task him or herself, so that task completion does not necessarily depend upon an equal contribution from individual group members. In cooperative learning, each student must work with the others in the group to complete the task (Coelho, 1982).

Here are some of the advantages of cooperative learning:

1. **increases student independence:** Students realize that they can work independently of the teacher. Thus, students become more self reliant learners both within and outside of class.
2. **promotes peer teaching:** Students are dependent upon each other for the acquisition of information. Each person has a chance to offer something of importance, and each person has something to learn from his or her peers.
3. **can be used in multi-level classrooms:** Weak and strong readers can be put together in the same group because the reading text that one receives is different from the reading text that another receives. It allows teachers to level students and give them suitable readings. This ensures that no one is bored, but that each learner has information that the others in the group require to complete the task.
4. **can be used in a variety of content areas:** This technique incorporates content that an educator tailors to the interests of his or her students. Everyone in the class is challenged, and this challenge leads to more effective learning. In addition, students are active, both mentally and physically, while being exposed to a wealth of new language and language forms.
5. **can be adapted for use in all age groups:** Educators may want to group students according to same age levels, same or different sex, depending

on the story. Thus, the technique can be used in different kinds of classrooms.

6. **promotes individual and group responsibility:** Students see their worth within the group, which develops self confidence and self respect.
7. **avoids dominance by one group member:** Everyone is responsible for his or her own learning as well as the learning of everyone else and the ultimate score of the group.
8. **creates peer acceptance and understanding**: Students have an opportunity to interact with each other.
9. **develops social social skills such as:** a. turn-taking, b. polite interruption, c. concensus/cooperation, d. mutual interdependence, e. encouragement, and f. moral support.
10. **aids in assessment:** Teachers can assess their students' progress in a variety of skill areas as students participate in the activity. This opportunity is desirable where a teacher is working with groups of language or literacy learners, or where a teacher is working in a specific content area at the same time as helping students develop their reading and writing skills (Plow, 1990).

The students' responsibilities in cooperative learning are to work on the assigned tasks as a cooperative group. Each student is responsible for the success or failure of the others. If Student A does not help Student B, then both students will fail.

The teacher's role is to set up reasonable, realistic, challenging activities, and communicate the rules for carrying out those activities. The rules should be conducive to the philosophy of cooperation. Once a teacher has clearly laid

out the tasks and motivated the activity, she or he should step back, acting only as a facilitator so that students can use their inventiveness and creativity to solve the problem.

How the Jigsaw Technique Works

The description below is based on instructions given by Elizabeth Coelho (Coelho, 1985/86; 1982), and my own use of the technique in the classroom.

The jigsaw technique is one that maximizes the interactive basis of cooperative learning. It can be applied in many content areas, and to develop many language skills. The description below focuses on how to carry out a jigsaw reading activity. This type of jigsaw reading exercise is designed so that students practise vocabulary already learned. Normally, a teacher would do some pre-reading activities such as identifying new vocabulary on the board or through exercises, using pictures to identify the topic and giving students a purpose for reading.

Materials: For the purpose of this explanation four texts will be used. Teachers may develop two, three or five texts, depending upon their situation. The teacher develops four texts (numbered A, B, C, D) for groups students to work on. Each text is related to, but different from each other. For example, the teacher may devise four different texts on a single topic such as the effects of smoking. Or, the teacher may devise four different points of view on a car accident. Or, the teacher may devise four different texts, each of which is part of a whole story. Each reading contains text with or without visuals, and exercises. Students are asked to complete the reading and do the exercises. It is important to develop exercises for each text to help students

cover the skill you are working on at the time, e.g., vocabulary, comprehension of details, inference questions, sentence structure, and so on.

Jigsaw Groups: First, students are put into groups of four — their *jigsaw groups*. Within these groups, each person is assigned a different letter: A, B., C, D, which will correspond to an assigned text (A, B, C, D). If necessary, the teacher ensures that the students get to know each other within their jigsaw groups by having them participate in an ice-breaking exercise which promotes cooperation. One such exercise could simply be having students find three things that they have in common.

It is preferable that teachers assign jigsaw groups rather than let students group themselves. It is best to mix abilities in jigsaw groups, so that stronger students can help weaker ones. The students' jigsaw group is like their home team. Students are made to realize that they are responsible for the success or failure of everyone on their team. They do this by being responsible for communicating the information they learn in their *expert groups*. Before moving into their expert groups, students are told to remember who is in their home team, or jigsaw group, because they will reassemble later to share and be tested on what they have learned in their expert groups.

Expert Groups: Next, the teacher divides students into expert groups by putting all of the A's in one group, all of the B's in one group, all of the C's in one group, and all of the D's in one group. The teacher informs the groups that it is the task of everyone in the expert group to ensure that everyone else in that group thoroughly understands what they read.

The teacher passes out the reading text lettered A, B, C, and D. The teacher does some prereading exercises. For example, she or he may ask students to skim the reading and find the main idea, or to try to identify who wrote the piece. Then they are asked to share what they have learned and to share the answers to exercises within the expert group. They should be encouraged to approach the teacher with questions. They should also be encouraged to rehearse exactly what they will say when they go back to their jigsaw groups. It is important to give students sufficient time to do this, or they will not learn the material thoroughly and the teacher will find that they tend to read the material when they return back to their jigsaw groups.

The teacher may give students written or oral instructions for carrying out their expert group assignment. The following illustration provides an example.

1. Read your passage through once for general comprehension.
2. Read the passage again, and make sure you know all of the vocabulary.
3. Do the vocabulary and comprehension questions.
4. Check the vocabulary and comprehension questions in your expert group, so that you are sure you can teach the story and vocabulary to your jigsaw group later.
5. Consult your teacher if there is something you don't understand.
6. Take the identity of the writer of the story and roleplay with your neighbour how you will tell your story and teach new vocabulary when you rejoin your jigsaw group.

Jigsaw Groups Revisited: Next, students are directed to return to their jigsaw groups. Within their jigsaw groups, each person should take a turn to explain the content of his or her reading, and to teach the vocabulary and other parts of the teacher's assignment. The teacher instructs students to ensure that everyone in their group understands every aspect of the text of everyone else in the jigsaw group. The teacher gives each student a time limit, but ensures that there is sufficient time to complete the task. Others in the group should ask questions to get clarification. The teacher also instructs students how much total time the group has before they will be tested as a group. The teacher tells students that the test will include questions from all texts, and that the jigsaw groups will receive a group mark depending upon how well each individual in the group achieved on the test.

Testing: Next, students write the test. The teacher may test the group as a whole, or individuals in the group. Papers are marked, and jigsaw groups receive a grade. If the teacher tests individuals in the group, it is best not to reveal which group member(s) pulled down a jigsaw group's grade to avoid students of accusing each other of inadequate performance.

It is desireable to receive feedback from the students and build an awareness of cooperation by asking questions such as: How did your group do in the test? How could you have done better? What did you observe about the group interactions? What did you observe about the story used? What did you think was most effective in this exercise? What did you think was least effective?

Creating Jigsaws

Teachers need to be aware of a number of factors when creating their own jigsaw reading activities.

1. First is choice of topic. The choice can be made by the teacher or the students, but it should be one of high interest to the majority of students. This means, of course, that the teacher must know his or her students. The teacher may be interested in current affairs, but find his or her students are more interested in sports. Still, teachers can choose controversial topics, such as drugs in sport. Teachers should be careful with sensitive topics as it is possible to be too controversial. Teachers should be alert for sources of content such as TV, radio, newspapers, textbooks, magazines.

2. Teachers should find out how much their students know about the chosen topic, via an informal discussion, an opinion poll, or a pretest. The results of such an investigation will determine the level of complexity of information that students are given.

3. Teachers should adapt their source of input to the needs of their students. Teachers need stick not only to written text. Cartoons, ads, or even audio cassettes are all sources of input. In addition, it is wise to plan follow-up activities to give students further practice.

4. Teachers should remember that not everything works. Students will understand if the teacher tells them that she or he is trying something new.

Students usually appreciate a teacher's efforts to vary teaching. Teachers should not be reluctant to discard materials that do not work. Those materials are excellent learning materials for teachers.

5. Teachers should get feedback from students. Students can be of tremendous assistance when teachers develop materials. It is appropriate for teachers to ask students what they found helpful and what they found confusing. Students can be asked if they can think of ways to make the exercise better. Students will gain even a greater sense of self worth if the teacher listens to their suggestions.

Teachers can create jigsaw reading exercise using steps outlined in the following illustration:

1. Find an appropriate text(s), and and think of ways to adapt it for a jigsaw reading exercise.
2. Divide the reading into sections, or devise different versions of the same story for expert groups.
3. Formulate some exercises that will help students read and understand difficult words and sentences in their expert groups which will later be shared in jigsaw groups.
4. Be sure the format of the exercises is such that students can take back the information to their jigsaw groups.
5. Formulate some guidelines for discussion for jigsaw groups.
6. Devise a short test to evaluate jigsaw groups' comprehension of text(s).

(Plow, 1990)

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